REMARKS

Summary of Office Action

Claims 1-32 are pending in this application.

Claims 1-7, 12-17, 26, 28 and 29 have been rejected under 35 U.S.C. § 102(e) as being anticipated by Gorecki U.S. Patent Application Publication No. 2004/0071205 ("Gorecki"). Claims 22, 23 and 31 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Jaynes et al. U.S. Patent Application Publication No. 2005/0047779 ("Jaynes"). Claims 8-11, 24, 25, 27 and 32 have been rejected under 35 U.S.C. § 103(a) as being obvious from Gorecki in view of Lu U.S. Patent No. 6,275,836 ("Lu"). Claims 18-21 and 30 have been rejected under 35 U.S.C. § 103(a) as being obvious from Hillery U.S. Patent No. 6,178,201 ("Hillery") in view of Wang et al. U.S. Patent No. 6,693,958 ("Wang").

Summary of Applicants' Reply

Applicants have amended claim 18 in order to correct a clerical error. No new matter has been added and the amendments are fully supported by the originally-filed application. Applicants respectfully traverse the Examiner's rejections.

Reply to the Prior Art Rejections

Claims 1-17, 24-29 and 32

Claims 1-7, 12-17, 26, 28 and 29 have been rejected under 35 U.S.C. § 102(e) as being anticipated by Gorecki. Claims 8-11, 24, 25, 27 and 32 have been rejected under

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35 U.S.C. § 103(a) as being obvious from Gorecki in view of Lu.
These rejections are respectfully traversed.

Applicants' invention, as defined by independent
claims 1, 8, 12, 17, 24, 26-29 and 32, is directed to circuitry
and methods for adaptively equalizing a received data signal.
The circuitry and methods include, *inter alia*, selection
circuitry for selecting between a first specified or fixed
value (or sampling location) and a second computed value (or
sampling location).

Gorecki generally discusses a transmitter that
includes equalization circuitry to provide signal compensation.
In one implementation of the equalizer in the transmitter, the
number of taps or pulse durations can be adjusted in accordance
with an adaptive algorithm. In other implementations of the
equalizer in the transmitter, the number of taps or pulse
durations can be pre-programmed by the user. The user or
system may select between different predetermined equalization
effects and the system may implement fine adjustments to the
predetermined effects (Gorecki, Abstract, page 6, ¶¶ 68 and 69
and pages 9-10, ¶¶ 112 and 114.)

First, applicants respectfully submit that Gorecki
does not show or suggest adaptively equalizing a received data
signal, as defined by applicants' claims 1, 8, 12, 17, 24, 26-
29 and 32. Instead, Gorecki describes an entirely different
system that provides for equalization in a transmitter in order
to improve signal integrity by introducing intersymbol
interference in a transmitted signal. Applicants find no
disclosure in Gorecki that shows or suggests an equalizer at a

<u>receiver</u> that adaptively equalizes a <u>received</u> data signal, as required by applicants' claims 1, 8, 12, 17, 24, 26-29 and 32.

Second, applicants respectfully submit that Gorecki does not show or suggest a device having programmable circuitry and processing circuitry for allowing a first value (or sampling location) to be specified or fixed and a second value (or sampling location) to be computed, as defined by applicants' claims 1, 8, 12, 17, 24, 26-29 and 32. On the contrary, Gorecki discusses that the number of taps or pulse durations can be adjusted in accordance with an adaptive algorithm <u>in one implementation</u>, or pre-programmed by the user <u>in another, different implementation</u> (Gorecki, page 6, ¶¶ 68 and 69). Nowhere does Gorecki show or suggest that programmable circuitry and processing circuitry are both included in the <u>same implementation</u> of the equalizer, as specified in applicants' claims.

Finally, applicants respectfully submit that Gorecki does not show or suggest selection circuitry for selecting between a first specified or fixed value (or sampling location) and a second computed value (or sampling location), as defined by applicants' claims 1, 8, 12, 17, 24, 26-29 and 32. Instead, in Gorecki, "[t]he user or system ... select[s] between the <u>predetermined</u> equalization effects" (Gorecki, page 9, ¶ 112). Thus, because Gorecki selects between multiple <u>predetermined</u> equalization effects, Gorecki does not show or suggest selecting between a specified or fixed value and <u>a computed value</u>. Moreover, Gorecki discusses the fine tuning of the predetermined parameters that can be selected, but not selection of <u>computed</u> values, let alone selection of computed

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values _only once_, as specified in certain of applicants'
claims.

Therefore, Gorecki does not show or suggest these
features of applicants' claims 1, 8, 12, 17, 24, 26-29 and 32.
Lu is cited by the Examiner as allegedly showing other features
of the claims and does not make up for the deficiencies of
Gorecki relative to the rejection.

Accordingly, applicants respectfully submit that
independent claims 1, 8, 12, 17, 24, 26-29 and 32, and
claims 2-7, 9-11, 13-16, 25 that depend, directly or indirectly
from claim 1, 8, 12 or 24, are allowable.

Claims 18-21 and 30

Claims 18-21 and 30 have been rejected under
35 U.S.C. § 103(a) as being obvious from Hillery in view of
Wang. This rejection is respectfully traversed.

Applicants' invention, as defined by claims 18
and 30, is directed to circuitry and a method for adaptively
equalizing a received data signal. Selection circuitry is
programmed to select between a first and a second error signal
only once while the equalization implementation circuitry
operates on the received data signal.

Hillery generally describes an adaptive equalizer
that includes a multiplexer 36 that selects between a first
error generator 38 and a second error generator 40. The
selection is controlled by error signal selector 34 which
switches between the error signals in response to a set of
control signals reflecting the status of a convergence
operation. (Hillery, FIG. 1, Abstract and col. 4,
lines 15-41.)

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Applicants respectfully submit that Hillery does not show or suggest selection circuitry programmed to select between a first and a second error signal as the error signal only once while the equalization implementation circuitry operates on the received data signal, as defined by claims 18 and 30. Applicants previously argued that signal selector 34 of Hillery selects among error signals in response to the convergence status and thus does not select only once, but the Examiner argues that the selection circuitry is programmed to select only once in steady conditions (Office Action, page 10). However, just because the Hillery device may operate under some conditions to select once (i.e., not change its selection in steady state) does not mean that the Hillery system is constructed to select only once under all conditions, as required by applicants' claims. On the contrary, the Hillery device is constructed to "switch between error signals ... to properly converge the adaptive equalizer" and not to select an error signal only once (Hillery, col. 4, lines 15-20). Moreover, even in steady state, any distortion that puts the Hillery system out of convergence will cause status conditions to change and thereby switch or change the error signals in order to bring the system back to convergence and therefore the error signal would not be selected only once. Thus, contrary to the Examiner's assertions, Hillery does not show or suggest apparatus that is constructed to include selection circuitry programmed to select an error signal only once, as defined by applicants' claims 18 and 30.

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Wang is cited by the Examiner as allegedly showing other features of the claims and does not make up for the deficiencies of Hillery relative to the rejection.

Accordingly, applicants respectfully submit that claims 18 and 30, and claims 19-21 that depend, directly or indirectly from claim 18, are allowable.

Claims 22, 23 and 31

Claims 22, 23 and 31 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Jaynes. This rejection is respectfully traversed.

Applicants' invention, as defined by amended claims 22 and 31, is directed to circuitry and a method for adaptively equalizing a received data signal. Selection circuitry selects either a programmably specified training pattern or a predetermined training pattern as a selectable training pattern only once.

Jaynes generally describes an adjustable inverse distortion operator. An error generator 70 receives at its input 72 a signal from signal switch 80. Signal switch 80 receives a signal from a decision device and a training signal from external process or operator. Decision-based parameter adaptation mode or trained parameter adaptation mode is selected depending on the signal selection made by switch 80. (Jaynes, Abstract, page 3, ¶ 18 and page 4, ¶ 23.)

Applicants respectfully submit that Jaynes does not show or suggest selection circuitry that selects a training pattern from a programmably specified training pattern and a predetermined training pattern, as defined by claims 22 and 31. Instead, Jaynes merely discusses that a training pattern is

provided from an external process or operator to a signal switch 80. Applicants find no disclosure in Jaynes that shows or suggests selection circuitry that selects between the external process or operator supplied training pattern, let alone selection circuitry that <u>selects only once</u> between the two training patterns. The Examiner cites to paragraphs 8, 22 and 23 of Jaynes as allegedly showing applicants' claimed selection circuitry. However, these cited portions of Jaynes merely describe a training mode of operation (selected by switch 80) in which a training pattern is provided by a process or operator to error generator 70. The cited portions of Jaynes do not describe a selection circuitry that selects only once between a programmably specified training pattern and a predetermined training pattern, as specified by applicants' claims 22 and 31. Moreover, the selection that is disclosed in Jaynes is a signal switch 80 which only selects between two modes of operation but not between two training patterns. Thus, Jaynes does not show or suggest all the features of applicants' claims 22 and 31.

Accordingly, applicants respectfully submit that claims 22 and 31, and claim 23 that depends from claim 22, are allowable.

Conclusion

The foregoing demonstrates that claims 1-32 are allowable. This application is therefore in condition for allowance. Reconsideration and prompt allowance are accordingly respectfully requested.

Respectfully submitted,

/Gall C. Gotfried/

Gall C. Gotfried
Registration No. 58,333
Agent for Applicants
ROPES & GRAY LLP
Customer No. 36981
1211 Avenue of the Americas
New York, New York 10036-8704
Tel: (212) 596-9000